

In the Claims:

Please cancel claims 2, 10-11, 13-16, 18-20, 22 and 24-27 without prejudice.

Please amend claim 1, 17 and 21 to read as follows:

1. (Original) An integrated circuit package comprising:

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a first substrate having a first surface and a second surface, the first substrate including at least one heat-generating circuit and having a first coefficient of thermal expansion; and

a second substrate having at least a first surface and a second coefficient of thermal expansion that is substantially equal to the first coefficient of thermal expansion, the first surface of the second substrate being thermally coupled to the second surface of the first substrate, the second substrate functioning to thermally conduct heat generated by the at least one heat-generating circuit away from the at least one heat-generating circuit;

a metallic heat sink thermally coupled to the second surface of the second substrate,
wherein a coefficient of thermal expansion of metallic heat sink is substantially
different than the first coefficient of thermal expansion and the second coefficient
of thermal expansion; and

an external epoxy molding material disposed exterior to the metallic heat sink such that
the metallic heat sink, the second substrate and the first substrate are encapsulated
by the external epoxy molding material.

2. (Cancelled)

3. (Original) The integrated circuit package of claim 1, wherein the coupling between the metallic heat sink and the second substrate is such as to accommodate movement of the metallic heat sink with respect to the second substrate.

4. (Original) The integrated circuit package of claim 2, wherein the coefficient of thermal expansion of the metallic heat sink is approximately seven times greater than the first coefficient of thermal expansion and the second coefficient of thermal expansion.

5. (Original) The integrated circuit package of claim 1, further comprising:

an adhesive layer having a first surface and a second surface, the first surface of the adhesive layer being physically connected to the second surface of the first substrate, the second surface of the adhesive layer being physically connected to the first surface of the second substrate, wherein a thickness of the adhesive layer is less than or equal to approximately one-sixth of a thickness of the first substrate and wherein the adhesive layer functions to thermally couple the first substrate to the second substrate and to position the second substrate in a fixed relation with respect to the first substrate.

6. (Original) The integrated circuit package of claim 1, further comprising:

a printed circuit board substrate having at least a first surface, the printed circuit board substrate including at least one conductive trace;

an adhesive layer having a first surface and a second surface, the first surface of the adhesive layer being physically connected to the first surface of the printed circuit board substrate, the second surface of the adhesive layer being physically connected to the first surface of the first substrate, wherein the adhesive layer functions to at least position the first substrate in a fixed relation with respect to the printed circuit board substrate; and

at least one electrically conductive path connecting the at least one heat-generating circuit to the at least one conductive trace.

7. (Original) The integrated circuit package of claim 6, wherein the adhesive layer comprises a conductive epoxy.

8. (Original) The integrated circuit package of claim 6, wherein the at least one electrically conductive path comprises at least one wire bond.

9. (Original) The integrated circuit package of claim 1, wherein a thickness of the second substrate is greater than a thickness of the first substrate.

10. (Cancelled)

11. (Cancelled)

12. (Original) The integrated circuit package of claim 1, wherein the first substrate comprises a first semiconductor material and wherein the second substrate comprises one of the first semiconductor material and a second semiconductor material.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Amended) An integrated circuit package comprising:

a first substrate having a first surface and a second surface, the first substrate including at least one heat-generating circuit and having a first coefficient of thermal expansion;

a second substrate having a first surface and a second surface, the second substrate having a second coefficient of thermal expansion that is substantially equal to the first coefficient of thermal expansion, the first surface of the second substrate being thermally coupled to the second surface of the first substrate, the second substrate functioning to thermally conduct heat generated by the at least one heat-generating circuit away from the at least one heat-generating circuit;

a printed circuit board substrate having at least a first surface, the printed circuit board substrate including at least one conductive trace;

a first adhesive layer having a first surface and a second surface, the first surface of the first adhesive layer being physically connected to the second surface of the first substrate, the second surface of the first adhesive layer being physically connected to the first surface of the second substrate, wherein a thickness of the first adhesive layer is less than or equal to approximately one-sixth of a thickness of the first substrate and wherein the first adhesive layer functions to thermally couple the first substrate to the second substrate and to position the second substrate in a fixed relation with respect to the first substrate;

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a second adhesive layer having a first surface and a second surface, the first surface of the second adhesive layer being physically connected to the first surface of the printed circuit board substrate, the second surface of the second adhesive layer being physically connected to the first surface of the first substrate, wherein the second adhesive layer functions to at least position the first substrate in a fixed relation with respect to the printed circuit board substrate;

at least one electrically conductive path connecting the at least one heat-generating circuit to the at least one conductive trace; and

a metallic heat sink thermally coupled to the second surface of the second substrate, wherein a coefficient of thermal expansion of the metallic heat sink is substantially different than the first coefficient of thermal expansion and the second coefficient of thermal expansion;

an external epoxy molding material disposed exterior to the metallic heat sink such that the metallic heat sink, the second substrate and the first substrate are encapsulated by the external epoxy molding material.

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Amended) A method for fabricating an integrated circuit, the method comprising the steps of:

providing a first substrate, the first substrate including at least one heat-generating circuit and having a first coefficient of thermal expansion;

providing a second substrate, the second substrate having a second coefficient of thermal expansion that is substantially equal to the first coefficient of thermal expansion;

thermally coupling the first substrate to the second substrate, the second substrate thermally conducts heat generated by the at least one heat-generating circuit away from the at least one heat-generating circuit;

thermally coupling a metallic heat sink to a surface of the second substrate, wherein a coefficient of thermal expansion of the metallic heat sink is substantially different than the first coefficient of thermal expansion and the second coefficient of thermal expansion; and

thermally coupling an external epoxy molding material exterior to the metallic heat sink such that the metallic heat sink, the second substrate and the first substrate are encapsulated by the external epoxy molding material.

22. (Cancelled)

23. (Original) The method of claim 21, wherein the step of thermally coupling the first substrate to the second substrate comprises the step of attaching the first substrate to the second substrate using an adhesive, wherein a thickness of the adhesive is less than or equal to approximately one-sixth of a thickness of the first substrate.

24. (Cancelled)

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25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

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